

W.Q. LIB
#B16 OTTER CR. (23)



THE

ONTARIO WATER RESOURCES

COMMISSION

WATER POLLUTION SURVEY

OF THE

VILLAGE OF NORWICH

COUNTY OF OXFORD

1964

TD
380
.N67
1964
MOE

VILLAGE OF NORWICH - 1964
COUNTY OF OXFORD

STANDARDS DEVELOPMENT BRANCH OMOE
36936000010643

Copyright Provisions and Restrictions on Copying:

This Ontario Ministry of the Environment work is protected by Crown copyright (unless otherwise indicated), which is held by the Queen's Printer for Ontario. It may be reproduced for non-commercial purposes if credit is given and Crown copyright is acknowledged.

It may not be reproduced, in all or in part, for any commercial purpose except under a licence from the Queen's Printer for Ontario.

For information on reproducing Government of Ontario works, please contact ServiceOntario Publications at copyright@ontario.ca

TD
380
.N67
1964

Report on water pollution
survey of the village of Norwich,
county of Oxford.

80782

R E P O R T

on

WATER POLLUTION SURVEY

of the

VILLAGE OF NORWICH

County of Oxford

October 19, 1964.

Division of Sanitary Engineering

REPORT

ONTARIO WATER RESOURCES COMMISSION

GENERAL

A water pollution survey of the Village of Norwich was conducted on October 19, 1964. Similar surveys were made by the Commission in 1958, 1959, 1960 and 1961.

The survey conducted on October 19, 1964 included the investigation of all known storm sewer outfalls. The effluents were sampled at that time, and samples were also obtained of the receiving stream Otter Creek. Otter Creek is a tributary of Big Otter Creek.

Previous water pollution surveys revealed that surface-water drains were discharging inadequately treated sanitary sewage into Otter Creek. This was attributed to sanitary sewer connections from private and commercial premises to the various drains. At the present time there are no industries in the municipality with significant industrial waste problems.

OWRC OBJECTIVES

In order to interpret the laboratory analyses of samples, the OWRC suggested standards are given. The objective for a clean stream is a maximum 5-Day Biochemical Oxygen Demand (BOD) of 4 parts per million, (ppm). Storm sewer effluents should not exceed 15 ppm BOD. It is suggested that a coliform count in excess of 2,400 per 100 ml (Membrane Filter Method) in a stream is indicative of pollution. The presence of detergents (ABS) is often related to sanitary sewage.

The suspended solids in storm drain effluents should not exceed 15 ppm.

STORM SEWER OUTFALLS

The various outlets are designated by mileage points which are indicated on an accompanying map of the village. In previous reports, the outlets were designated by numbers. The laboratory analyses of samples obtained of drain effluents in June 1961 are also given.

0053.49W - North Court St. north-east of bridge

<u>Date</u>	<u>5-Day BOD (ppm)</u>	<u>SOLIDS (ppm)</u>			<u>Anionic Detergent as ABS (ppm)</u>	<u>M.F.Coliforms per 100 ml</u>
		<u>Total</u>	<u>Susp.</u>	<u>Diss.</u>		
June 21/61	5.2	556	28	528	-	189,000
Oct. 19/64	NO FLOW					

0053.48W - North Court St. south-east of bridge

<u>Date</u>	<u>5-Day BOD (ppm)</u>	<u>SOLIDS (ppm)</u>			<u>Anionic Detergent as ABS (ppm)</u>	<u>M.F.Coliforms per 100 ml</u>
		<u>Total</u>	<u>Susp.</u>	<u>Diss.</u>		
June 21/61	8.4	744	68	676	-	235,000
Oct. 19/64	14	718	22	696	2.8	420,000

0053.30W - Elgin St. outfall

<u>Date</u>	<u>5-Day BOD (ppm)</u>	<u>SOLIDS (ppm)</u>			<u>Anionic Detergent as ABS (ppm)</u>	<u>M.F.Coliforms per 100 ml</u>
		<u>Total</u>	<u>Susp.</u>	<u>Diss.</u>		
June 21/61	21	578	42	536	-	107,000
Oct. 19/64	170	1132	460	672	42.5	15,000,000

0053.12W - Main St. north-west of bridge

<u>Date</u>	<u>5-Day BOD (ppm)</u>	<u>SOLIDS (ppm)</u>			<u>Anionic Detergent as ABS (ppm)</u>	<u>M.F.Coliforms per 100 ml</u>
		<u>Total</u>	<u>Susp.</u>	<u>Diss.</u>		
June 21/61	27	630	52	578	-	1,470,000
Oct. 19/64	10	528	11	517	9.0	11,000,000

0053.11W - Main St. south-east of bridge

<u>Date</u>	<u>5-Day BOD (ppm)</u>	<u>SOLIDS (ppm)</u>			<u>Anionic Detergent as ABS (ppm)</u>	<u>M.F.Coliforms per 100 ml</u>
		<u>Total</u>	<u>Susp.</u>	<u>Diss.</u>		
June 21/61	145	808	80	728	-	19,000,000
Oct. 19/64	18	654	18	636	2.2	9,000,000

0053.10W - Main St., 100 feet south-west of bridge

<u>Date</u>	<u>5-Day BOD (ppm)</u>	<u>SOLIDS (ppm)</u>			<u>Anionic Detergent as ABS (ppm)</u>	<u>M.F.Coliforms per 100 ml</u>
		<u>Total</u>	<u>Susp.</u>	<u>Diss.</u>		
June 21/61	195	1284	336	948	-	28,000,000
Oct. 19/64	86	528	53	475	3.4	4,900,000

0053.00W - Church St. outfall

<u>Date</u>	<u>5-Day BOD (ppm)</u>	<u>SOLIDS (ppm)</u>			<u>Anionic Detergent as ABS (ppm)</u>	<u>M.F.Coliforms per 100 ml</u>
		<u>Total</u>	<u>Susp.</u>	<u>Diss.</u>		
June 21/61	18	716	66	650	-	7,110,000
Oct. 19/64	135	940	198	742	20.0	130,000,000

0052.92W - Pitcher St. north-east of bridge

<u>Date</u>	<u>5-Day BOD (ppm)</u>	<u>SOLIDS (ppm)</u>			<u>Anionic Detergent as ABS (ppm)</u>	<u>M.F.Coliforms per 100 ml</u>
		<u>Total</u>	<u>Susp.</u>	<u>Diss.</u>		
June 21/61	32	1170	610	560	-	1,630,000
Oct. 19/64	150	1322	478	844	15.5	0

0052.91W - Pitcher St. 15 feet south-east of bridge

<u>Date</u>	<u>5-Day BOD (ppm)</u>	<u>SOLIDS (ppm)</u>			<u>Anionic Detergent as ABS (ppm)</u>	<u>M.F.Coliforms per 100 ml</u>
		<u>Total</u>	<u>Susp.</u>	<u>Diss.</u>		
June 21/61	NOT SAMPLED					
Oct. 19/64	275	1224	256	968	43.5	22,000,000

0052.90W - Pitcher St. 20 feet south-east of bridge

<u>Date</u>	<u>5-Day BOD (ppm)</u>	<u>SOLIDS (ppm)</u>			<u>Anionic Detergent as ABS (ppm)</u>	<u>M.F.Coliforms per 100 ml</u>
		<u>Total</u>	<u>Susp.</u>	<u>Diss.</u>		
June 21/61	NOT SAMPLED					
Oct. 19/64	4.3	722	4	718	0.5	7,500

0052.72W - Stover St. north-west of Hwy. 59 bridge

<u>Date</u>	<u>5-Day BOD (ppm)</u>	<u>SOLIDS (ppm)</u>			<u>Anionic Detergent as ABS (ppm)</u>	<u>M.F.Coliforms per 100 ml</u>
		<u>Total</u>	<u>Susp.</u>	<u>Diss.</u>		
June 21/61	NOT SAMPLED					
Oct. 19/64	32	1146	43	1103	2.0	780,000

0052.71W - Stover St. south-west of Hwy. 59 bridge

<u>Date</u>	<u>5-Day BOD (ppm)</u>	<u>SOLIDS (ppm)</u>			<u>Anionic Detergent as ABS (ppm)</u>	<u>M.F. Coliforms per 100 ml</u>
		<u>Total</u>	<u>Susp.</u>	<u>Diss.</u>		
June 21/61	2.4	584	22	562	-	10,300
Oct. 19/64	6.8	478	17	461	3.0	39,000,000

0052.69W - Stover St. north-east of Hwy. 59 bridge

<u>Date</u>	<u>5-Day BOD (ppm)</u>	<u>SOLIDS (ppm)</u>			<u>Anionic Detergent as ABS (ppm)</u>	<u>M.F. Coliforms per 100 ml</u>
		<u>Total</u>	<u>Susp.</u>	<u>Diss.</u>		
June 21/61	13	538	32	506	-	184,000
Oct. 19/64	40	510	51	459	4.6	Broken in Transit

0052.55W - Sutton St. west side, west outlet

<u>Date</u>	<u>5-Day BOD (ppm)</u>	<u>SOLIDS (ppm)</u>			<u>Anionic Detergent as ABS (ppm)</u>	<u>M.F. Coliforms per 100 ml</u>
		<u>Total</u>	<u>Susp.</u>	<u>Diss.</u>		
June 21/61	17	532	28	504	-	284,000
Oct. 19/64	57	804	80	724	20.5	140,000,000

0052.54W - Sutton St. west side, east outlet

<u>Date</u>	<u>5-Day BOD (ppm)</u>	<u>SOLIDS (ppm)</u>			<u>Anionic Detergent as ABS (ppm)</u>	<u>M.F. Coliforms per 100 ml</u>
		<u>Total</u>	<u>Susp.</u>	<u>Diss.</u>		
June 21/61	17	574	32	542	-	63,000
Oct. 19/64	13	504	31	473	6.5	27,000,000

0052.52W - Sutton St. east side

<u>Date</u>	<u>5-Day BOD (ppm)</u>	<u>SOLIDS (ppm)</u>			<u>Anionic Detergent as ABS (ppm)</u>	<u>M.F. Coliforms per 100 ml</u>
		<u>Total</u>	<u>Susp.</u>	<u>Diss.</u>		
June 21/61	43	624	46	578	-	49,000
Oct. 19/64	220	872	226	646	13.0	8,800,000

OTTER CREEK

The following samples were obtained at Otter Creek on October 19, 1964, and submitted to the OWRC laboratories for examination.

<u>Sampling Point No.</u>	<u>Location</u>	<u>5-Day BOD (ppm)</u>	<u>SOLIDS (ppm)</u>			<u>Anionic Detergent as ABS (ppm)</u>
			<u>Total</u>	<u>Susp.</u>	<u>Diss.</u>	
0053.50	Above Norwich	1.4	378	8	370	0.1
0052.70	At Hwy.59 bridge, Norwich	2.6	386	7	379	0.3
0052.40	South-east of Norwich	1.4	394	2	392	0.3

<u>Sampling Point No.</u>	<u>Location</u>	<u>M.F.Coliforms per 100 ml</u>	<u>Dissolved Oxygen (ppm)</u>	<u>Temperature °C</u>
0053.50	Above Norwich	74	11.0	10.5
0052.70	At Hwy.59 bridge, Norwich	1,600,000	10.1	11.0
0052.40	South-east of Norwich	2,000	11.0	11.0

It should be noted that rain was experienced in the area on the evening prior to the survey, and dilution of the stream would have resulted.

REFUSE DISPOSAL SITE

The municipal refuse disposal site is located at the south-east limits of the village. The site did not appear to be contributing to the pollution of Otter Creek at the time of the investigations on October 19, 1964.

SUMMARY

The water pollution survey of the Village of Norwich conducted by the Commission on October 19, 1964, revealed the presence of

serious pollution problems.

Conditions were similar to those experienced during previous surveys. The municipal storm drainage system was found to be contributing to the serious pollution by Otter Creek, a tributary of Big Otter Creek. As indicated by the laboratory results, 11 out of 15 samples obtained of drain effluents on October 19, 1964 revealed BOD in excess of OWRC objectives. Similarly, 13 out of 15 effluent samples revealed exceptionally high coliform counts. The presence of detergents was most evident in all samples. Due to rainfall experienced in the area, there was a fast flow in Otter Creek. The stream was accordingly somewhat diluted. The marked increase in the coliform count of a sample obtained at Highway 59 bridge in Norwich suggested serious pollution resulting from the discharge of sanitary sewage.

The more recent survey again indicated that there is a need of a municipal sewage treatment and collection system for the Village of Norwich. Private sewage disposal systems should not be considered due to the limited size of building lots and the number of premises involved. It is quite evident that the majority of such installations are connected to the municipal storm sewers.

RECOMMENDATION

The Village of Norwich should proceed as soon as possible with the construction of a municipal sewage treatment system.

All of which is respectfully submitted

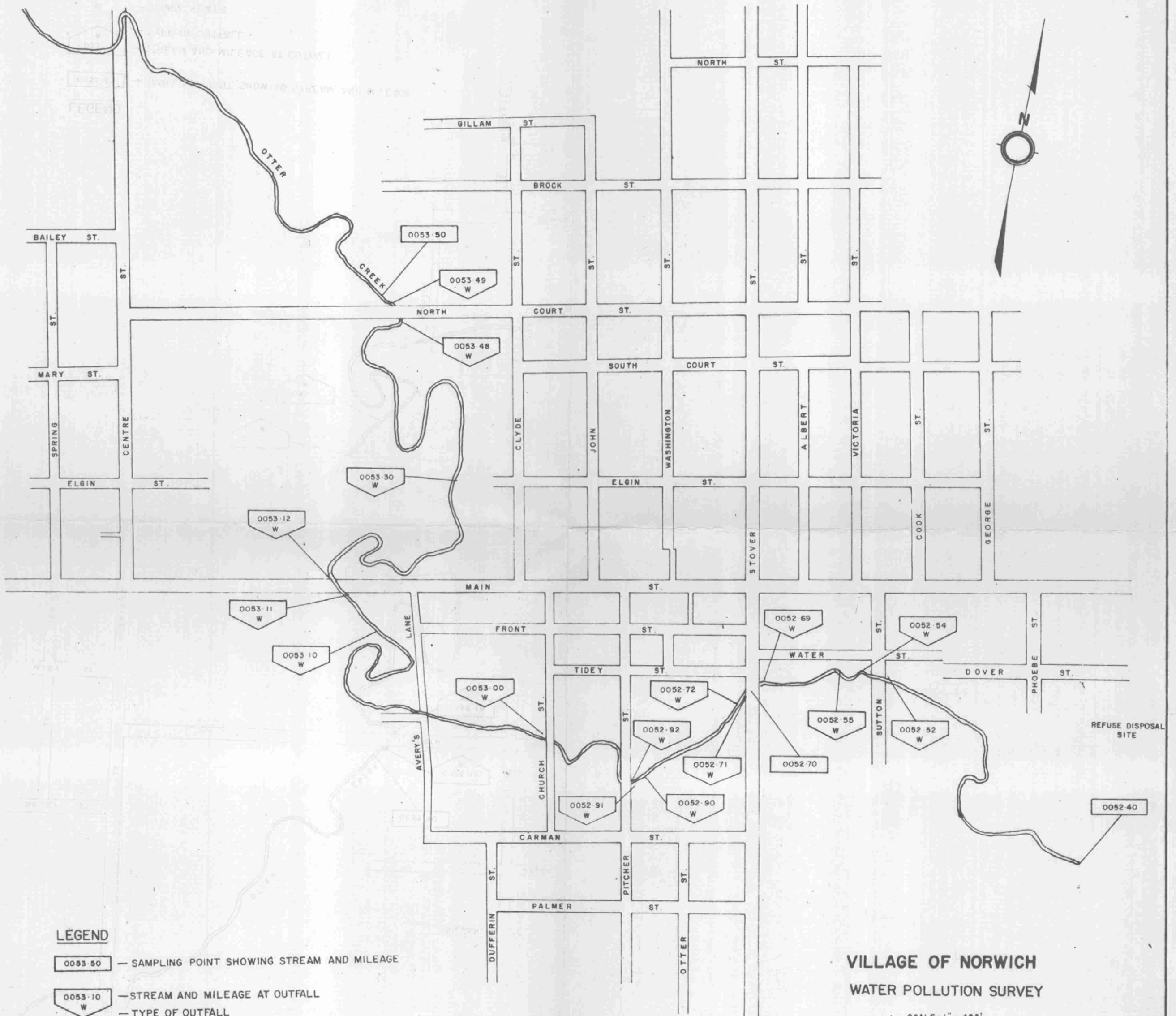
District Engineer:

C. E. McIntyre
C. E. McIntyre, P.Eng.

Approved by:

K. H. Sharpe
K. H. Sharpe, Director.

ec



LEGEND

0053-50 — SAMPLING POINT SHOWING STREAM AND MILEAGE

0053-10 W — STREAM AND MILEAGE AT OUTFALL
— TYPE OF OUTFALL

W — STORM SEWER

VILLAGE OF NORWICH WATER POLLUTION SURVEY

SCALE: 1" = 400'